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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/701,245	11/04/2003	Yong-Jun Kwak	678-1299 (P10931)	6089

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EXAMINER	
FIGUEROA, MARISOL	
ART UNIT	**PAPER NUMBER**
2617	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/29/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/701,245	KWAK ET AL.	
	Examiner	Art Unit	
	Marisol Figueroa	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 29, 2006 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 1 and 7 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 1, 2, 7, and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over KOJIMA et al. (US 2002/017330 A1) in view of JAIN et al. (US 2002/0193118 A1).

Regarding claim 1, Kojima discloses a method of determining a target parameter for a target cell in a radio network controller (RNC) in a CDMA (Code Division Multiple Access) mobile communication system where parameters in cells measured by each of a plurality of Node Bs within

a coverage area of the RNC are maintained equal to or less than target parameters for the cells, the method comprising the steps of:

receiving at the RNC a cell measurement for the target cell from a Node B (Fig. 1; Node B#1) that controls the target cell (Fig. 1; paragraphs [0053] and [0057]; the Node B#1 transmits to the radio network controller RNC a measurement result of the block error ratio (i.e., cell measurement) as the report, and the RNC receives the report and knows from the report the radio condition around the node);

adjusting the target parameter for the target cell at the RNC according to a relation between the cell measurement and the target parameter for the target cell (abstract, lines 9-17; Fig. 4; paragraph [0053], lines 1-7; paragraphs [0060] and [0063]; the radio network controller calculates the new target SIR (i.e., target parameter) on the basis of the block error ratio measurement results); and

transmitting the adjusted target parameter from the RNC to the Node B (paragraph [0063]; the radio network controller RNC transmits the new target SIR or the decreased target SIR (i.e., adjusted target parameter) to the Node B#1).

But, Kojima does not particularly disclose wherein the target parameter that is adjusted is the target <u>noise rise over thermal noise (ROT)</u>.

However, adjusting a target ROT for a node is well known in the art. Jain teaches access network (i.e., a BS or BSC) that adjust a congestion threshold or target congestion level, namely "TH_OUTERLOOP" according to a congestion metric which is a measure of function of Rise Over Thermal, ROT, therefore, is noted that the TH_OUTERLOOP is consider to be a target ROT. The access network compares the measured metric (i.e., ROT) to a desired threshold (which is initially equal to TH_OUTHERLOOP, figure 3, step 182) and adjust the outherloop threshold as shown in figure 3, steps 192, 194, and 196 according to the comparison, the outherloop threshold is

calculated so as to maintain the measured metric (i.e., measured ROT) to a desired level (i.e., target ROT) (paragraphs [0011]; [0032]; [0038], [0039], and [0041]). A given system may have a target congestion level to maintain traffic conditions without interruption, i.e., to avoid overloading and underloading of resources (paragraphs [0009]; [0027]; and [0041]).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify Kojima to adjust a target ROT for a given node, as suggested by Jain, in order to provide a system with an adjusted target congestion level (i.e., target ROT) for maintaining traffics conditions in the node without interruption, i.e., to avoid overloading and underloading.

Regarding claim 2, the combination of Kojima and Jain disclose the method of claim 1, Jain discloses wherein the measurement ROT (i.e., cell measurements) in the target cell is received periodically (paragraph [0037]).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify Kojima in order to receive the cell measurements periodically, as suggested by Jain, in order for the radio network controller to know the radio conditions around the node with frequency.

Regarding claim 7, Kojima discloses an apparatus for determining a target parameter for a target cell in a CDMA (Code Division Multiple Access) mobile communication system where parameters in cells measured by each of a plurality of Node Bs are maintained equal to or less than target parameters for the cells, the apparatus comprising:

a Node B for measuring cell parameters in the target cell (Fig. 1; paragraphs [0053] and [0057]; the Node B#1 measures block error rates (i.e., cell parameter) in its service area and transmit to the radio network controller a measurement report) and cells neighboring the target cell within a coverage area of the Node B (Fig. 1; Node B#2; figure illustrates that Node B#1 has neighboring

cell Node B32 that also communicates with the radio network controller), transmitting the measured cell parameters (paragraphs [0053] and [0057]), and updating the target parameter for the target cell to an adjusted target parameter (abstract, lines 9-17; Fig. 4; paragraph [0053], lines 1-7; paragraphs [0060] and [0063]; the radio network controller calculates the new target SIR (i.e., adjusted target parameter) on the basis of the block error ratio measurement results and transmits the new target SIR to the Node B#1 to make the Node B#1 to update the current target SIR into the new target SIR); and

a radio network controller (RNC) for receiving the measured cell parameters (Fig. 1; paragraphs [0053] and [0057]; the radio network controller RNC receives a measurement result of the block error ratio (i.e., cell parameter measurement) from Node B#1),

adjusting the target parameter for the target cell according to a relation between the measured cell parameters and preset target parameter for the target cell (abstract, lines 9-17; Fig. 4; paragraph [0053], lines 1-7; paragraphs [0060] and [0063]; the radio network controller calculates the new target SIR (i.e., target parameter) on the basis of the block error ratio measurement results (i.e., measured cell parameters)), and transmitting the adjusted target parameter to the Node B (paragraph [0063]; the radio network controller RNC transmits the new target SIR or the decreased target SIR (i.e., adjusted target parameter) to the Node B#1).

But, Kojima does not particularly disclose wherein the target parameter that is adjusted is the target <u>noise rise over thermal noise (ROT)</u>.

However, adjusting a target ROT for a node is well known in the art. Jain teaches access network (i.e., a BS or BSC) that adjust a congestion threshold or target congestion level, namely "TH_OUTERLOOP" according to a congestion metric which is a measure of function of Rise Over Thermal, ROT, therefore, is noted that the TH_OUTERLOOP is consider to be a target

ROT. The access network compares the measured metric (i.e., ROT) to a desired threshold (which is initially equal to TH_OUTHERLOOP, figure 3, step 182) and adjust the outherloop threshold as shown in figure 3, steps 192, 194, and 196 according to the comparison, the outherloop threshold is calculated so as to maintain the measured metric (i.e., measured ROT) to a desired level (i.e., target ROT) (paragraphs [0011]; [0032]; [0038], [0039], and [0041]). A given system may have a target congestion level to maintain traffic conditions without interruption, i.e., to avoid overloading and underloading of resources (paragraphs [0009]; [0027]; and [0041]).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify Kojima to adjust a target ROT for a given node, as suggested by Jain, in order to provide a system with an adjusted target congestion level (i.e., target ROT) for maintaining traffics conditions in the node without interruption, i.e., to avoid overloading and underloading.

Regarding claim 8, the combination of Kojima and Jain disclose the apparatus of claim 7, Jain discloses wherein the Node B transmits the ROTs periodically to the RNC (paragraph [0037]). Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention, to modify Kojima in order to receive the cell measurements periodically, as suggested by Jain, in order for the radio network controller to know the radio conditions around the node with frequency.

5. **Claims 3, 4, 9, and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over KOJIMA et al. in view of JAIN et al., and further in view of CHOI (US 6,295,452 B1).

Regarding claim 3, the combination of Kojima and Jain disclose the method of claim 1, but the combination fails to particularly disclose wherein the measurement of the cell parameter (i.e., measurement ROT) in the target cell is received when the measured cell parameter (i.e., measured

ROT) is one of less than and greater than the target parameter (i.e., target ROT) by a predetermined threshold.

However, transmitting measurements according to the comparison of a threshold is well known in the art, and Choi is evidence of the fact. Choi teaches a method for soft handoff in where a mobile station periodically measures the strength of the pilot signals from a current and candidate base stations, the mobile station compare the respective signals to a preset threshold, and if the pilot strength from a candidate base station is greater than a threshold value, the mobile station transmits the measurements results to its base station (col.2, lines 40-52).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to modify the combination of Kojima and Jain, to include the feature of the RNC receiving the measurement ROT when the measurement is less or greater than a predetermined threshold or target, as suggested by Choi, because the comparison of the measurements with a threshold value determines the need of action from the radio network controller, for example, if the measurements are within the threshold value, then there is no need to send the measurements because the system is working well.

Regarding claim 4, the combination of Kojima and Jain disclose the method of claim 1, Jain discloses wherein the measurement ROT in the target cell is received periodically (P.0037, lines 1-5; P.0038, lines 10-15), but the combination fails to particularly disclose wherein the measurement of the cell parameter (i.e., measurement ROT) in the target cell is received when the measured cell parameter (i.e., measured ROT) is one of less than and greater than the target parameter (i.e., target ROT) by a predetermined threshold.

However, transmitting measurements according to the comparison of a threshold is well known in the art, and Choi is evidence of the fact. Choi teaches a method for soft handoff in where

a mobile station periodically measures the strength of the pilot signals from a current and candidate base stations, the mobile station compare the respective signals to a preset threshold, and if the pilot strength from a candidate base station is greater than a threshold value, the mobile station transmits the measurements results to its base station (col.2, lines 40-52).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to modify the combination of Kojima and Jain, to include the feature of the RNC receiving the measurement ROT when the measurement is less or greater than a predetermined threshold or target, as suggested by Choi, because the comparison of the measurements with a threshold value determines the need of action from the radio network controller, for example, if the measurements are within the threshold value, then there no need to send the measurements because the system is working well.

Regarding claim 9, the combination of Kojima and Jain disclose the apparatus of claim 7, but fails to particularly disclose wherein the Node B transmits the ROTs to the RNC if the ROTs are one of less than and greater than the target ROTs by a predetermined threshold.

However, transmitting measurements according to the comparison of a threshold is well known in the art, and Choi is evidence of the fact. Choi teaches a method for soft handoff in where a mobile station periodically measures the strength of the pilot signals from a current and candidate base stations, the mobile station compare the respective signals to a preset threshold, and if the pilot strength from a candidate base station is greater than a threshold value, the mobile station transmits the measurements results to its base station (col.2, lines 40-52).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to modify the combination of Kojima and Jain, to include the feature of the Node transmitting the measured ROTs when the measurement is less or greater than a predetermined

threshold, as suggested by Choi, because the comparison of the measurements with a threshold value determines the need of action from the radio network controller, for example, if the measurements are within the threshold value, then there is no need to send the measurements because the system is working well.

Regarding claim 10, the combination of Kojima and Jain disclose the apparatus of claim 7, Jain discloses wherein the Node B transmits the ROTs to the RNC periodically (P.0037, lines 1-5; P.0038, lines 10-15). But the combination fails to particularly disclose wherein the ROT measurements are transmitted to the RNC when the ROTs are one less than and greater than the target ROT by a predetermined threshold.

However, transmitting measurements according to the comparison of a threshold is well known in the art, and Choi is evidence of the fact. Choi teaches a method for soft handoff in where a mobile station periodically measures the strength of the pilot signals from a current and candidate base stations, the mobile station compare the respective signals to a preset threshold, and if the pilot strength from a candidate base station is greater than a threshold value, the mobile station transmits the measurements results to its base station (col.2, lines 40-52).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to modify the combination of Kojima and Jain, to include the feature of the Node transmitting the measured ROTs when the measurement is less or greater than a predetermined threshold, as suggested by Choi, because the comparison of the measurements with a threshold value determines the need of action from the radio network controller, for example, if the measurements are within the threshold value, then there is no need to send the measurements because the system is working well.

6. **Claims 5 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over KOJIMA et al. in view of JAIN et al., and further in view of EINOLA et al. (US 2005/0009518 A1).

Regarding claim 5, the combination of Kojima and Jain disclose the method of claim 1, but the combination does not expressly disclose wherein the measurement ROT is received from the Node B and the adjusted target ROT is transmitted to the Node B using Node B application part signaling messages. However, Einola teaches that in radio access networks such as UTRAN comprising of a set of Base Stations and Radio Network controllers communicate with each other using signaling messages (P.0005, lines 22-30). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to recognize that the Node transmit the cell measurements and the RNC transmit the adjusted target parameter using signaling messages, as suggested by Einola, since is commonly well known that in radio access networks, communication between Base Stations, Radio Network Controllers and MSC is made by signaling messages.

Regarding claim 11, the combination of Kojima and Jain disclose the apparatus of 7, but the combination does not expressly disclose wherein the Node B transmits the ROTs to the RNC and the RNC transmits the adjusted target ROT to the Node B using Node B application part signaling messages. However, Einola teaches that in radio access networks such as UTRAN comprising of a set of Base Stations and Radio Network controllers communicate with each other using signaling messages (P.0005, lines 22-30). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to recognize that the Node transmit the cell measurements and the RNC transmit the adjusted target parameter using signaling messages, as suggested by Einola, since is commonly well known that in radio access networks, communication between Base Stations, Radio Network Controllers and MSC is made by signaling messages.

7. **Claims 6 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over KOJIMA et al. in view of JAIN et al., and further in view of KIM et al. (US 2002/0141349 A1).

Regarding claim 6, the combination of Kojima and Jain disclose the method of claim 1, but the combination fails to particularly disclose wherein if the measurement ROT is maintained less than the target ROT in the target cell for a predetermined time, the RNC decreases the target ROT, and if the measurement ROT is maintained equal to or greater than the target ROT in the target cell for the predetermined time, the RNC increases the target ROT.

However, Kim teaches that is typically of a communication system to maintain a ROT near a predetermined value for the transmission in a reverse link to be stable (P.0044-0045). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention, to modify the combination of Kojima and Jain to include the feature of adjusting the target ROT by decreasing the target ROT if the measured ROT is less than the target ROT and increasing the target ROT if the measured ROT is greater than the target ROT, as suggested by Kim, in order to make adjustments to the target ROT that guarantees an stable communication system, since an stable system is guarantee when the actual values of ROT in a cell are maintained near a predetermined threshold level (P.0114-0119).

Regarding claim 12, the combination of Kojima and Jain disclose the apparatus of claim 7, but the combination fails to particularly disclose wherein if the ROT is maintained less than the target ROT in the target cell for a predetermined time, the RNC decreases the target ROT, and if the ROT is maintained equal to or greater than the target ROT in the target cell for the predetermined time, the RNC increases the target ROT.

However, Kim teaches that is typically of a communication system to maintain a ROT near a predetermined value for the transmission in a reverse link to be stable (P.0045). Therefore, it would

have been obvious to one having ordinary skill in the art at the time of the invention, to modify the combination of Kojima and Jain to include the feature of adjusting the target ROT by decreasing the target ROT if the measured ROT is less than the target ROT and increasing the target ROT if the measured ROT is greater than the target ROT, as suggested by Kim, in order to make adjustments to the target ROT that guarantees an stable communication system, since an stable system is guarantee when the actual values of ROT in a cell are maintained near a predetermined threshold level (P.0114-0119).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(a) SCHREUDER et al. (US 2005/0227699 A1) – Method and network element for optimization of radio resource utilization in radio access network.

(b) ZEDEH et al. (US 6,266,531 B1) – System and method for adaptive thresholds for cell load sharing.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marisol Figueroa whose telephone number is (571) 272-7840. The examiner can normally be reached on Monday Thru Friday 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester G. Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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